

CONSUMER VIDEO SYSTEM FOR RECORDING AND PLAYING VIDEO PROGRAMMING

Patent Application
of

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CONSUMER VIDEO SYSTEM FOR RECORDING AND PLAYING VIDEO PROGRAMMING

1 The present application is a continuation of pending provisional patent application
2 Serial No. 60/192,642, filed on March 27, 2000, entitled "Digital Video Recorder and
3 Digital Movie Player".

4 5 BACKGROUND OF THE INVENTION

6 1. Field of the Invention

7 This invention relates generally to a consumer video product and, more
8 particularly, it relates to a digital replacement of the VCR in households for the purpose
9 of recording and playing video programming that is brought into the home via airways,
10 cable, satellite, or other media such as portable video recorders. Additionally, the present
11 invention relates to the method, hardware, and software to download video from the
12 internet.

13 14 2. Description of the Prior Art

15 Recently, a new product has emerged in the consumer electronic market - the "set
16 top box". The set top box hooks up to the television and allows a user to record and
17 temporarily store television programming. The most significant feature of the set top box
18 is that the set top box incorporates a temporary storage device, such as a hard disk drive,
19 allowing for recording a television input or channel. Efforts are being made to
20 incorporate the set top box directly into the television housing since the set top box
21 specifically augments the television and does not necessarily replace any of the other
22 audio and video entertainment systems including the current video tape VCRs commonly
23 found in most households.

24 Another product for playing movies and the like currently on the market includes
25 the DVD player. The DVD player is a pre-recorded movie player having a proprietary
26 digital format. Still another product, which is no longer available to the consumer, is the
27 DIVX player, which was designed solely as a movie player with an internet

1 verification/authorization connection. To operate the DIVX player, a user would "rent" a
2 movie by purchasing the CD movie at a designated retailer. Once the user initiated the
3 movie in the DIVX player, the DIVX player would allow the movie to be repeatedly
4 watched by the user for a predetermined time period. Once the predetermined time
5 period had expired, the movie could not be played unless the user, through the DIVX
6 player, contacted the service provider through the internet connection to "rent" additional
7 time. Unfortunately, the DIVX system did not have permanent storage or read/write
8 removable media. Furthermore, the DIVX system did not have any recording capability.

9 Therefore, a need exists for a complete consumer video system which plays media
10 in digital format, i.e., DVD or other pre-recorded formats. In addition, there exists a need
11 for a complete consumer video system which records analog or digital video into digital
12 format and records it onto removable and non-removable media. Furthermore, a need
13 exists for a complete consumer video system which accesses the internet as another
14 source of video input that can be recorded or saved. Finally, there exists a need for a
15 complete consumer video system which incorporates a temporary storage device allowing
16 for recording one input or channel while watching another and allowing for time delay
17 features that pause the output while continuing to download or record the input.

18 19 SUMMARY

20 The present invention is a video recording system for recording and playing video
21 programming. The video recording system comprises a housing and at least one memory
22 storage device for storing video programming mounted within the housing. An internet
23 connection that connects the memory storage devices to the internet. Downloading
24 means downloads video programming through the internet connection and stores the
25 downloaded video programming on the memory storage device. In addition, in an
26 embodiment of the present invention, the video recording system has means for recording
27 broadcast programming onto the memory storage device, the broadcast programming
28 selected from the group consisting of television broadcasts, cable television input, and
29 satellite input.

1 In addition, the present invention includes a device for recording video
2 programming. The device comprises a read/write removable media drive with read/write
3 removable media receivable within the read/write removable media drive. An internet
4 connection connects the read/write removable media drive to the internet. Downloading
5 means downloads video programming from the internet and stores the downloaded video
6 programming on the read/write removable media.

7 Furthermore, the present invention includes a method for downloading video
8 programming from any external internet location. The method comprises providing a
9 storage device, connecting the storage device to the external internet location, encoding
10 and decoding information from the external internet location, downloading the video
11 programming, storing the video programming on the storage device, and playing the
12 stored video programming on a television.

13 14 BRIEF DESCRIPTION OF THE DRAWINGS

15 FIG. 1 is a perspective view illustrating a digital video recorder and movie player
16 system, constructed in accordance with the present invention, having a memory storage
17 device, a read/write removable media drive, an internet video connection, and
18 connections for recording broadcast programming and downloading/playing it on a
19 television set.

20 21 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

22 The present invention is a complete system that incorporates the ability to do the
23 following:

- 24 a) play media in digital format, i.e., DVD or other pre-recorded media;
- 25 b) record analog or other non-digital video into digital format and record it
26 onto removable media;
- 27 c) access the internet as another source of video input that can be recorded or
28 saved; and

1 d) incorporate a temporary storage device allowing for recording one input or
2 channel while watching another and allowing for time delay features that
3 pause the output while continuing to download or record the input.

4 As illustrated in FIG. 1, the present invention is a consumer video system,
5 indicated generally at 10, for recording and playing video programming downloaded
6 through the internet or through broadcasts such as television, cable, satellite, or other
7 broadcasts. The consumer video system 10 has at least one memory storage device 12, a
8 read/write removable media drive 14, a system PCBA (not shown), internet access
9 capabilities 28, mechanical housing 16, an external remote control device 18, and
10 appropriate software and firmware (not shown). The consumer video system 10 of the
11 present invention provides a user the full versatility of a conventional set-top box with the
12 added benefits of downloading programs and information to read/write removable media
13 and downloadable video capability from the internet. Furthermore, the consumer video
14 system 10 allows the playing of pre-recorded video data.

15 The memory storage device 12 of the consumer video system 10 allows a user to
16 download and store an analog or digital movie and/or television programming. Further,
17 the memory storage device 12 includes a delayed play and watch feature which allows a
18 user to stop or delay watching a movie or a television program and resume watching at a
19 later time while the rest of the movie or television programming is still downloading into
20 the memory storage device 12. It should be noted that the memory storage device 12 of
21 the consumer video system 10 can be any type of memory storage device including, but
22 not limited to, a hard disk drive, an optical drive, a memory chip device, et.

23 The read/write removable media drive 14 of the consumer video system 10
24 provides removability of any read/write removable media of a stored movie or television
25 programming. The read/write removable media drive 14 can support any type of
26 read/write removable media including, but not limited to, DVDs, CDs, mini-discs, floppy
27 disks, etc. Additionally, the read/write removable media drive 14 provides the playing of
28 prerecorded formats such as commonly found on DVD, mini-discs, floppy disks, and the
29 like.

1 The system PCBA of the consumer video system 10 is typically mounted within
2 the mechanical housing 16 and has the signal inputs, i.e., television broadcasts, cable,
3 satellite, or internet, the electronics to convert the analog signal to digital format, and also
4 the encoding and decoding function required to authorize downloading of movies or other
5 programming from desired internet sites. The system PCBA of the consumer video
6 system 10 additionally allows the recording of programming onto the memory storage
7 device received from television broadcasts, cable television input, satellite input, and
8 other broadcasts. The system PCBA further includes the appropriate software and
9 hardware for playing the recorded video, either from the internet or broadcasts, on a
10 television.

11 The system PCBA also contains all of the power supply and interface protocol and
12 cabling to the memory storage device 12 and the read/write removable media drive 14.
13 Furthermore, the system PCBA has necessary remote control functions to allow the
14 remote control 18 to function.

15 The internet access 28 of the consumer video system 10 allows a user to download
16 rented or paid for movies or other video from desired internet sites. A special button 20
17 can be provided on the mechanical housing 16 or on the remote control 18 to connect the
18 user with any particular internet site to download movies. Such a feature allows the user
19 the option of renting or buying a movie without ever leaving their home or business.

20 The mechanical housing 16 of the consumer video system 10 includes a power
21 outlet 22 and a door 24 for the read/write removable media drive 14, internal power
22 supply, user buttons (i.e., channel select, pause, arrows, power, play, record, etc.) and
23 other desired aesthetic features to make the consumer video system 10 more desirable to
24 the user. Additionally, the mechanical housing 16 includes all necessary and desired
25 cable and data jacks 26 with access ports on the back panel, for connecting with cable
26 boxes, stereos, televisions, internet, etc.

27 The external remote control device 18 of the consumer video system 10 is similar
28 in size and shape to a typical television, VCR, and/or satellite remote control device. It

1 should be noted that any size or type of remote control device 18, such as IR or RF, can
2 be used.

3 The software and firmware of the consumer video system 10 contains sufficient
4 software to allow the consumer video system 10 to function as described and desired.
5 The software and firmware can be programmed to include features and benefits of the
6 consumer video system 10 of the present invention such as programming by movie
7 category, commercial skip, etc.

8 The programming, whether downloaded from any internet site or received from
9 television broadcasts, cable television input, and satellite input, can be stored first on the
10 memory storage device 12 or stored first on the removable media. Furthermore, the
11 software and the firmware of the consumer video system 10 of the present invention
12 allows the programming stored first on the memory storage device 12 to be recorded on
13 the read/write removable media. Likewise, the software and the firmware allow the
14 programming stored first on the read/write removable media to be recorded on the
15 memory storage device 12.

16 The consumer video system 10, as discussed above, is able to completely replace
17 the current VCR unit most people have in their homes with added functionality of doing
18 so digitally. Ease of use and benefits to the user are numerous including the ability to
19 download movies and other programming through an internet connection onto read/write
20 removable or fixed media for playing of the downloaded movies and television
21 programming at a remote site.

22 The foregoing exemplary descriptions and the illustrative preferred embodiments
23 of the present invention have been explained in the drawings and described in detail, with
24 varying modifications and alternative embodiments being taught. While the invention
25 has been so shown, described and illustrated, it should be understood by those skilled in
26 the art that equivalent changes in form and detail may be made therein without departing
27 from the true spirit and scope of the invention, and that the scope of the present invention
28 is to be limited only to the claims except as precluded by the prior art. Moreover, the

1 invention as disclosed herein, may be suitably practiced in the absence of the specific
2 elements which are disclosed herein.
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